



Mathematics Policy

Review Date December 2025

Every Child, Every Chance, Every Day; Working Together



MATHEMATICS POLICY

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Introduction to Maths

Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives.

At Crabtree Farm Primary School, we have committed to a mastery approach to the teaching of mathematics. Through approaching mathematics in this way, our aim is that pupils would develop:

- a positive attitude towards mathematics;
- fluency in selecting and using appropriate methods of calculation;
- their ability to reason mathematically with confidence, independence and flexibility to follow lines of inquiry, conjecture and an ability to generalise;
- an ability to problem-solve using their fluency and reasoning as tools to facilitate their approach;
- a conceptual understanding through the process of using concrete resources, pictorial representations and finally abstract mathematical concepts;
- an appreciation of the patterns and relationships which make up the structure of mathematics;
- an ability to use and apply mathematical skills across the curriculum and in real life contexts.

Aims

At Crabtree Farm Primary School our maths vision of intent is:

Our children will be enthusiastic and confident when talking about and using number. They will have a firm grasp of the fundamental principles of mathematics and be able to use these and apply them in varied, real-life scenarios. We want to nurture curious children who see maths as an exciting, creative subject which can open the door to a world of opportunities.

We aim:

- To promote enjoyment and enthusiasm for learning, whilst embedding mathematical concepts, through practical activity, exploration and discussion.
- To develop logical thinking and problem-solving skills.
- To promote confidence and competence in mathematics, enabling children to be able to apply their mathematical understanding in a variety of contexts.

- To develop number fluency through a deep understanding of numbers and the number system.
- To promote reasoning skills at every stage of mathematical development, supporting children to be able to explain their understanding and ask mathematical questions of others.
- To explore the properties of shapes and develop measuring skills in a range of practical contexts.
- To understand the importance of mathematical skills in everyday life.

Teacher Guidelines

Underpinning principles

- Mathematical learning behaviours are developed such that pupils focus and engage fully as learners who reason and seek to make connections.
- Teachers continually develop their specialist knowledge for teaching mathematics, working collaboratively to refine and improve their teaching.
- Curriculum design ensures a coherent and detailed sequence of essential content to support sustained progression over time.

Lesson design

- Lesson design links to prior learning to ensure all can access the new learning and identifies carefully sequenced steps in progression to build secure understanding.
- Examples, representations and models are carefully selected to expose the structure of mathematical concepts and emphasise connections, enabling pupils to develop a deep knowledge of mathematics.
- Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other.
- It is recognised that practice is a vital part of learning, but the practice must be designed to both reinforce pupils' procedural fluency and develop their conceptual understanding.

In the classroom

- Pupils are taught through whole-class / flexible group interactive teaching, enabling all to master the concepts necessary for the next part of the curriculum sequence.

- In a typical lesson, the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration and discussion, enabling pupils to think, reason and apply their knowledge to solve problems.
- Use of precise mathematical language enables all pupils to communicate their reasoning and thinking effectively.
- If a pupil fails to grasp a concept or procedure, this is identified quickly and gaps in understanding are addressed systematically to prevent them falling behind.
- Significant time is spent developing deep understanding of the key ideas that are needed to underpin future learning.
- Key number facts are learnt to automaticity and other key mathematical facts are learned deeply and practised regularly, to avoid cognitive overload in working memory and enable pupils to focus on new learning.

Scheme of work – Early Years Foundation Stage (EYFS)

Mathematics within the Early Years is taught through the guiding principles of the EYFS Statutory Framework and the EYFS Profile Early Learning Goals.

The areas include:

- Early number sense
- Counting
- Matching and sorting
- Patterns
- Making connections
- Recognising relationships
- Working with numbers
- Shape, space and measures
- Problem solving
- Calculating

Mathematics in EYFS is planned for in several ways:

- A range of child-initiated activities, planned activities and continuous provision, ensuring all areas of learning within mathematics are covered.
- Direct teaching sessions, which follow a mastery approach.
- Assessed adult led activities, where children work in small groups with an adult, following the principles of the EYFS curriculum or a development of the direct teaching session.
- Frequently in other areas of the setting, for example sand, water, ICT, outdoors.
- At times during the daily routine when there are practical opportunities for counting and calculating.
- Opportunities for writing numerals such as in 'role play' and the more formal teaching of writing numerals.

Within direct teaching sessions, in both F1 and F2, the children are taught through a mastery approach, in F2 this follows the themes in the White Rose scheme of work. The sessions revisit prior learning and teach all areas of mathematics, allowing children to apply the direct teaching with a hands-on approach. In F1 there is a particular focus to pattern work and in F1 and F2 a particular focus on early number sense.

Activities are planned to support children's developing communication skills and understanding of mathematical language.

Progress is recorded in the classroom through ongoing assessments during direct teaching, adult-led activity trackers and any child-initiated evidence (recorded through observations, work samples and photographs). Termly assessments are completed for all children on Arbor, which feed into the Early Years Foundation Stage Profile at the end of F2.

Homework is set weekly in F2 and are practical activities for the children to complete at home, to help them consolidate the learning taking place that week. In F1, there are weekly handouts that children can choose to take home, again to consolidate the week's learning. Regular 'Stay and Play' sessions invite parents/carers into the classroom to see first-hand the learning and reinforce the importance of mathematics to the wider school community. This allows parents/carers to further support their child/ren's learning at home.

Teaching and learning takes place through:

- Starters - the children are involved in fluency activities, games, songs and rhymes. Visual material and active learning are key strategies in these sessions.
- Direct teaching sessions - activities and language are modelled after the learning objectives have been shared with the children (using manipulatives to support learning).
- Adult led activities - children work in small (mixed) ability groups with the teacher on activities.
- Independent/child-initiated activities - these activities reinforce the learning objectives for that week's work. There are always several independent activities and child-initiated opportunities in the inside and outside environment. Support is given to children when necessary.

Scheme of work - Years 1 to 6

The White Rose Maths scheme of work is followed from Reception to Year 6, in order for teachers to teach using the mastery approach. The National Curriculum 2014 for mathematics must also be referred to regularly to aid planning and teaching.

The White Rose resources, the NCETM Mastery documents and the vast selection of resources we have in school will be used to support the teaching and learning of the 2014 National Curriculum for mathematics using a mastery approach.



The White Rose scheme of work provides yearly overviews, structured termly plans and small steps of progress for each unit. Teachers utilise these documents to support their long-term and short-term planning, to ensure a full cohesive curriculum which allows all children to make progress, through careful adaptations and well-thought out tasks.

Lesson design and time allocation

The time allocation for mathematics is 180 hours per year. Lessons are taught daily each lasting between 45-60 minutes depending on the appropriateness. Each session should follow the structure of a mastery lesson as outlined on the planning grid. This includes:

- warm-up starters,
- previous knowledge (to recap and revisit prior learning),
- explicit teaching of new skills,
- opportunities to practise new skills/concepts and apply these to both verbal and recorded mathematical reasoning tasks,
- opportunities for problem solving,
- carefully-planned extension activities, to stretch and challenge children's learning.

Research shows that all children, when introduced to a new concept, should have the opportunity to build competency by following the Concrete, Pictorial, Abstract approach.

Concrete: Children should have the opportunity to work with physical objects/concrete resources, in order to bring the maths to life and to build understanding of what they are doing.

Pictorial: Alongside concrete resources, children should work with pictorial representations, making links to the concrete. Visualising a problem in this way can help children to reason and to solve problems.

Abstract: With the support of both the concrete and pictorial representations, children can develop their understanding of abstract methods.

Every opportunity should be sought to practise and promote maths throughout the working day. Regular "incidental" maths and "simmering" activities are an extremely powerful method of reinforcing concepts, and for some children, such activities are their main source of internalising information.

Recording and presentation

Work may be recorded in the children's yellow maths books or maths folder, according to the nature of the activity.

Key Stage 2 children will have a range of activities including daily reasoning task(s), previous knowledge, fluency and problem-solving.

Children should be encouraged to take pride in the presentation of their work, which should conform to the school's policy on presentation, including the daily learning objective and short date.

Grouping

When appropriate, children could be placed into target groups, depending on ability and specific needs. These groups should be fluid and children will move groups when appropriate.

A pre or post teach session will be delivered for children who need extra input in order for them to continue to make progress broadly in line with the rest of the group or class.

Carefully designed adapted tasks should be given, ensuring they are matched to the children's ability in order to maximise their learning.

Children working at a pre-key stage level will work in specific target groups. The 'Ready to Progress' DfE criteria is used to prioritise key mathematical learning.

Children who are working at a greater depth standard are challenged well within classroom settings and in some cases, small groups.

Good mastery practise demonstrates inclusion for all and a deep understanding of mathematical concepts at differing levels, including children with SEND.

Use of Resources and Classroom Environment

Effective teaching can be greatly enhanced by the skilful selection of resources that are appropriate to the task and to the child.

IT and online applications can be used to support and enhance the learning. Applications such as Mathletics, Times Table Rock Stars and Hit the Button are available to children, both in school and at home, to showcase their learning and give them an opportunity to revise concepts.

Each classroom will have a range of resources appropriate to age and stage. These resources should be displayed and easily accessible for the children to promote independent learning.

It is an expectation that each classroom will have a mathematical working wall. The display(s) should reflect the current teaching within the room and act as an aid to learning. Children's work should also (where appropriate) be displayed to show expectations of learning.

Maths displays should have the following:

- Title
- Mathematical vocabulary

- Basic maths concepts such as times tables and the 4 operations
- WAGOLL's from children or a teacher example
- Resources
- Mathematical questioning with some interactivity

Vocabulary

Use of mathematical vocabulary should be consistent across school. Staff should take opportunities to model relevant vocabulary, and encourage children to use this during everyday opportunities. STEM sentences should be displayed on 'working walls', as well as key vocabulary for the unit.

Whenever possible, teachers/teaching assistants should interpret children's mathematical thinking and model correct mathematical vocabulary, to further develop their explanation and verbal reasoning skills.

Assessment

Formative assessment

Teachers continually assess children using formative assessment techniques. This enables teachers to quickly intervene in addressing misconceptions and guiding pupils' learning. This approach to assessment also allows children who may not have grasped a concept to be targeted for immediate intervention either in the lesson, prior to the next lesson or through a targeted impact session.

Teachers also gain a view on the progress of the class as a whole and can amend their weekly planning to provide additional teaching on specific concepts and address whole-class misconceptions.

As well as continuous assessment for learning in lessons, year groups use 'end of block' topic assessments to assess the children's understanding before moving on to the next concept.

In Year 4, teachers regularly use times tables assessments to assess children's progress.

In Year 6, teachers regularly use past KS2 exam papers to assess children's progress.

Summative assessment

Throughout the year, Years 1-6 use the PUMA assessment materials, alongside teacher assessments to conduct termly assessment. In spring term, Year 6, use previous KS2 SATs papers to evaluate children's progress. In addition to this, formal assessments are used across school. All these allow the school to track the individual progress of pupils across the school and to target interventions as

required. Information from these assessments is also used as part of the pupil progress meetings throughout the academic year.

Statutory assessments are completed in maths:

- At the beginning of Reception - baseline assessment
- At the end of Foundation 2/Reception – EYFS Profile, Early Learning Goals in Number and Numerical Pattern
- At the end of Year 4 – Multiplication Tables Check
- At the end of Year 6 – KS2 SATs

Review

Acceptance of the mathematics policy implies commitment to it.

The mathematics policy will be evaluated and reviewed on a regular basis.

Miss Coulling and Miss Provines

Maths Subject Leaders

December 2024 to be reviewed December 2025